

# ANTI-THEFT DISPLAY BOX ASSEMBLY

## Description

### 1. Technical Field

The invention relates generally to a display device and, more specifically to an improved display box assembly for displaying a product to a consumer while providing anti-theft protection for the product.

### 2. Background of Related Art

Many types of display devices have been utilized over the years in order to hold and display numerous products to consumers. For example, it is well known to use display cards to display a variety of consumer products such as jewelry, buttons, hair accessories, and other smaller size products. Display cards are typically hung by retailers on racks, or the like, so that consumers may remove the display card to view the product. One problem associated with display cards is the relative ease of which they can be stolen. In an attempt to prevent such theft, many display cards now carry electronic sensors which trigger an alarm if not removed or disarmed before the product leaves the store. However, such sensors can usually be easily removed. In addition, the products can easily be removed from the card carrying the sensor. One exemplary type of display cards are jewelry display cards. Jewelry display cards may include a generally planar outer surface having a member to secure the article of jewelry thereto, and a hook or aperture for engaging a support member such as a display rack or rod. The securing member may take a variety of forms, depending upon the type of jewelry supported on the display card. Conventional jewelry display cards may include apertures for receiving earrings, pins, etc. and may also include one or more slots for receiving a necklace, bracelet or other items. When a consumer removes the display card it is not difficult to remove the associated piece of jewelry which may be secured in place by nothing more than an electronic sensor sticker.

1 While generally effective for displaying a variety of products, there currently does not  
2 exist a display card or other device which can be utilized to display a product to a consumer in  
3 such a manner that the product is clearly visible while also deterring theft of the product in a  
4 simple and efficient manner.

## 6 Summary

7 An object of the present invention is to provide a display device which can be utilized to  
8 display a product to a consumer on a rod or other support, and which aids in deterring theft of the  
9 product displayed therein.

10 In accordance with one aspect, there is provided a display box assembly including a  
11 housing for supporting the product, a lid for accessing the interior of the housing, and a  
12 removable hanger for locking the lid and housing in a closed position such that the lid and  
13 housing enclose the product within the locked display box. In the unlocked position, the lid is  
14 rotatable relative to the housing along an axis of rotation. In order to lock the lid to prevent  
15 rotation a set of cooperating locking members are provided. In one embodiment, the housing  
16 preferably includes a first locking member in the form of a notch or key hole, and the lid  
17 preferably includes a second locking member of the same type as the housing. In this  
18 embodiment, the locking hanger preferably includes a pair of corresponding tabs which are sized  
19 to fit within the key holes. In order to lock the product within the display box the tabs are  
20 inserted within each of the key holes and slid into a locked position so as to prevent rotation of  
21 the lid, as described in greater detail below. A sticker may be provided over the portion of the  
22 hanger which is removably secured to the case body. Thus, the hanger is not readily removable  
23 from the case body and the fact that the hanger is removable is camouflaged by the sticker. To  
24 remove the product from within the locked box the hanger must first be removed from  
25 engagement with the lid and housing. If a sticker is used, it is first removed, then the tabs of the  
26 locking hanger are removed from the key holes in the housing and lid. The lid is then free to  
27 rotate into the opened position.

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Fig. 1 is a front view of an anti-theft display device in a locked position according to a first embodiment of the present invention;

Fig. 2 is an exploded, rear perspective view of the display device of Fig. 1 showing the lid in a closed position with the locking hanger removed;

Fig. 3 is an exploded, front perspective view of the cassette body of Fig. 1 in an open or unlocked position, with the locking hanger removed;

Fig. 4 is an exploded view of the cassette body of Fig. 1;

Fig. 5 is a rear, plan view of the cassette body of Fig. 1 in a fully open position;

Fig. 6 is an end, cross-sectional view taken along lines 6-6 of Fig. 5 in a first fully open position;

Fig. 7 is an end, cross-sectional view taken along lines 6-6 of Fig. 5 in a second, partially closed position;

Fig. 8 is a cross-sectional view taken along lines 6-6 of Fig. 5 in a closed position;

Fig. 9 is a perspective view of the locking hanger of Fig. 1;

Fig. 10 is a top plan view of the locking hanger of Fig. 9;

Fig. 11 is a side view of the locking hanger of Fig. 9;

Fig. 12 is an enlarged, rear perspective view, partially broken away of the locking hanger and housing not engaged;

Fig. 13 is a cross-sectional view taken along lines 13-13 of Fig. 12;

Fig. 14 is an enlarged, rear perspective view, partially broken away of the locking hanger being inserted into the housing and lid;

Fig. 15 is a cross-sectional view taken along lines 15-15 of Fig. 14;

Fig. 16 is a cross-sectional view taken along lines 16-16 of Fig. 15;

1 Fig. 17 is an enlarged, rear perspective view, partially broken away of the locking hanger  
2 and housing in the locked position;

3 Fig. 18 is a cross-sectional view taken along lines 18-18 of Fig. 17; and

4 Fig. 19 is a cross-sectional view taken along lines 19-19 of Fig. 18.

### 5 6 **Detailed Description of the Illustrative Embodiments**

7 A display box assembly **10** for displaying a product is illustrated in Figs. 1-19. As used  
8 herein, the term “product” refers to any article or item sold to a consumer. Referring to the  
9 figures, the box assembly **10** includes a housing **12** which supports the product therein, a lid **14**  
10 for accessing the interior of the housing, and a removable hanger **16** which locks the lid together  
11 with the housing in a closed position. In order to lock the lid and prevent rotation of the lid into  
12 the open position, a set of cooperating locking members are provided on the lid, housing and  
13 hanger, as described in greater detail below.

14 As best seen in Fig. 4, the housing preferably includes a base **18**, a front wall **20**, and a  
15 pair of side walls **22**, **23** supported by the base. In the present embodiment, the housing also  
16 preferably includes a first locking member in the form of a notch or key hole **24a** disposed in the  
17 base, adjacent an upper edge **26** thereof (Figs. 1, 3 and 5). The notch **24a** is preferably sized to  
18 receive a corresponding tab **28a** supported on the hanger **16** in order to lock the box assembly in  
19 the closed position, as described in further detail below. The lid preferably includes a top **30**, a  
20 pair of side walls **32**, **33**, a spine or rear wall **34**, and a bottom extension **36** (See Fig. 4). In the  
21 present embodiment, the lid further includes a second locking member also in the form of a notch  
22 or key hole **24b** disposed in the bottom extension **36**, adjacent an upper edge **38** thereof (Figs. 1  
23 and 5). The notch **24b** is also preferably sized to receive a corresponding tab **28b** supported on  
24 the hanger **16**. In the present embodiment, the tabs **28a**, **28b** may each include a post **29a**, **29b**  
25 supporting a head **31a**, **31b** having a diameter larger than that of the posts (Figs. 10 & 11).  
26 Notches **24a**, **24b** may have the shape of a key hole including openings **33a**, **33b** having a first  
27 diameter sized to receive the heads of the tabs. The key hole may further include slots **35a**, **35b**  
28 extending from the openings **33a**, **33b** which have a narrower width than the diameter of the  
29 openings in order to lock the posts **29a**, **29b** therein. Alternately, the tabs and slots may take

1 other forms, as would be known to those of skill in the art.

2 The housing **12** and lid **14** are preferably made of a hard, plastic material and may be  
3 either transparent or opaque. However, it is preferred that at least the top **30** of the lid be  
4 transparent so that items supported within the box are visible. As illustrated, the housing and lid  
5 may be separate pieces, with the lid being rotatable along an axis of rotation “y” so as to move  
6 between an open (Fig. 3) and closed (Fig. 2) position. In the present embodiment, the lid  
7 preferably includes a pair of openings **40, 42** disposed through side walls **32, 33**, respectively.  
8 The openings **40, 42** are sized to receive corresponding protrusions **44, 46** supported on an inner  
9 surface of the side walls **22, 23** of the box so that the lid is rotatable between the open and closed  
10 positions along the axis of rotation “y”. Other methods of rotatably attaching the lid and housing  
11 may be utilized, as would be known to those of skill in the art. As best shown in Figs. 5-8, as the  
12 lid is rotated about axis “y”, the back extension **36** moves from an open position where it lies  
13 substantially in a plane parallel and spaced from the base **18** of the housing (Figs. 5 & 6), to a  
14 position where it lies in a plane substantially perpendicular to the base, and finally (Fig. 7), to the  
15 closed position where it lies in the same plane as the base. When the back extension and base are  
16 in the same plane, likewise the notches **24a, 24b** are also in the same plane, such that the locking  
17 hanger can be easily attached to the housing in the closed position. Once the tabs **28a, 28b** are  
18 received within the notches **24a, 24b** and slid into the locked position the lid **14** is prevented  
19 from rotation about the “y” axis. In this manner, the lid is secured to the housing and the box  
20 assembly is locked. Once locked, a sticker may be placed over the rear of the hanger in order to  
21 conceal the locking mechanism. The sticker may include information relating to the product and  
22 may also include an electronic sensor. Alternately, an electronic sensor may be placed within the  
23 box assembly.

24 The housing and the locking hanger may further include cooperating locating members  
25 **48, 50** as best shown in Fig. 13. The locating members further aid in locating the tabs of the  
26 locking hanger relative to the notches of the lid and housing. In the present embodiment, the  
27 locating member **48** is a protrusion, while member **50** is an indentation, although other style  
28 locating members may be utilized as would be known to those of skill in the art.

Use of the display box assembly **10** will now be described with reference to the drawings.

In use, the box assembly **10** is initially in an unlocked or open position where the interior of the housing is accessible. A product is then removably secured to the interior of the housing, in any desired manner. For example, a card supporting the item may be inserted within the housing. Upon securing the product within the housing the lid may be moved into the closed position in order to enclose the product. Alternately, an electronic sensor may first be placed within the housing before moving the lid into the closed position. In either case, the lid is rotated about the axis of rotation “y” such that the back extension **36** moves from an open position where it lies substantially in a plane parallel and spaced from the base **18** of the housing (Figs. 5 & 6), to a position where it lies in a plane substantially perpendicular to the base, and finally (Fig. 7), to the closed position where it lies in the same plane as the base. As the back extension is moving, so too is the top **30** of the lid. The top **30** of the lid moves from the open position where it lies in a plane slightly offset and parallel to the plane of the base **18** of the housing, to a plane substantially perpendicular to the base, and finally to a plane parallel and spaced from the base. When the lid is in the closed position, the locking hanger can be attached to the housing by inserting the heads **31a**, **31b** of the tabs through openings **33a**, **33b**, and then sliding the posts **29a**, **29b** into the reduced diameter slots **35a**, **35b** so as to lock the box assembly in the closed position by preventing the lid **14** from rotation about the “y” axis. Once locked, a sticker may be placed over the rear of the hanger in order to conceal the locking mechanism. Once closed, the hanger may be used to display the box from a support, for example a rod.

1           It will be understood that various modifications may be made to the embodiments  
2 disclosed herein. For example, it should be understood that the lid and housing may be unitary in  
3 construction, that the shape may be other than rectangular, that the locking hanger may be a  
4 locking member and not include a hanger if display is in a case, and that any suitable material  
5 may be utilized for the box assembly. In addition, the tabs and slots of the locking members may  
6 be reversed, i.e. the tabs on the lid and housing and the slots on the locking hanger. Therefore,  
7 the above description should not be construed as limiting, but merely as exemplifications of  
8 preferred embodiments. Those skilled in the art will envision other modifications within the  
9 scope, spirit and intent of the invention.

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11       WHAT IS CLAIMED IS: